



Risk assessment SB/IB-Gel electrophoresis

Produced 2010-05-31 By Riskbedömare 2 Livsvetenskaper
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Modified 2015-11-09 By Cecilia Sundelin

Final risk assessment of the method

2. medium risk

1. State the premises in which the activity is taking place

2. Description of activity

Electrophoretic run of DNA RNA

3. Products

Product name	Concentration	Form	Quantity	Danger	Comments
50X Tris/Acetic Acid/EDTA Buffer H319 P264 , P280 , P305 + P351 + P338 , P337 + P313		Solution			
Agarose		Solid			1% agarose gel in TAE buffer
Ethidium bromide CLP-legislation H302 , H330 , H341 P260 , P281 , P284 , P310 Older legislation R22 , R26 , R68 S26 , S28 , S36/37 , S45 Lists PRIO Database	20 microliter	Solution			
MOPS, sodium salt R36/37/38 S26 , S36		Solution			This solution is used with sodium acetate, and EDTA as buffer for RNA electrophoresis.

Hazard statements

H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H341	Suspected of causing genetic defects .

Precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray. OBSERVE! This precautionary statement has to be specified by the supplier. See the Material Safety Data Sheet for the exact formulation.
P264	Wash ... thoroughly after handling. OBSERVE! This precautionary statement has to be specified by the supplier. See the Material Safety Data Sheet for the exact formulation.

P280	Wear protective gloves/protective clothing/eye protection/face protection. OBSERVE! This precautionary statement has to be specified by the supplier. See the Material Safety Data Sheet for the exact formulation
P281	Use personal protective equipment as required.
P284	[In case of inadequate ventilation] wear respiratory protection. OBSERVE! This precautionary statement has to be specified by the supplier. See the Material Safety Data Sheet for the exact formulation.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/...
P337 + P313	If eye irritation persists: Get medical advice/attention.

Risk phrases

R22	Harmful if swallowed.
R26	Very toxic by inhalation.
R36/37/38	Irritating to eyes, respiratory system and skin.
R68	Possible risk of irreversible effects.

Safety advice phrases

S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S28	After contact with skin, wash immediately with plenty of ... (to be specified by the manufacturer)
S36	Wear suitable protective clothing
S36/37	Wear suitable protective clothing and gloves
S45	In case of accident or if you feel unwell, seek medical advice immediately. Show the label where possible

4. Risk category

b: high risk

5. Level of exposure

Moderate

6. Ventilation

Level of protection 2 - ventilated hood

7. Biological material

class 1

8. Comments on Biological material

DNA, RNA from microorganisms

9. Risk codes

T+	N
	
Very toxic	Dangerous for the environment

10. Comments on risk codes

Liquid waste from DNA gels must be decontaminated before handling. All the waste must go in the labeled bin waste with EtBr sign.

11. Premises

ventilation , other

12. Comments on premises

Always operate under ventilation hood with gloves, avoid any contact with skin

13. Protective signs

chemicals , other

14. Comments on protective signs

always handle with gloves, try to avoid contact with surfaces, clean everything with ethanol after use.

15. Personal protective equipment

protective glasses , protective gloves , protective clothing

16. Comments on Personal protective equipment

Avoid contact with skin

17. Describe the technical equipment

electrophoretic chamber

18. Environment

emission to water

19. Comments on environment

Decontaminate EtBr solution with destaining bags over night before discarding in the environment. The destaining bag is discarded in the bag for solid EtBr waste.

20. Waste management

chemical waste

21. Comments on Waste management

EtBr contaminated solution is decontaminated according to above. Used destaining bags together with all other solid contaminated waste are thrown in separate waste boxes which are handed over to Stena Recycling.

22. Emergency equipment

absorbing substance

23. Comments on Emergency equipment

In case of accidental pouring of Ethidium Bromide (on floors and such), use special absorbance material.
Use proper decontaminating solution (recipe?) to clean surfaces that have been in contact with EtBr.
Absorbance material is placed on shelf in balance room and on cart in corridor outside course lab 6145.

24. Hazardous actions

ventilation failure , other

25. Comments on Hazardous actions

In case on spillage on skin eg. if glove breaks?

26. Special instructions to other personel

Only use special gloves (different color) to touch contaminated surfaces -the electrophoretic apparatus and everything under the hood (including EtBr container)-, use clean gloves (normal color) to touch everything outside the hood, including the thermal incubator for agarose and concentrated TAE buffer flask.

Misuse of gloves : don't touch sink and surfaces outside the chemical hood with contaminated gloves.

27. Accidental readiness

Absorbance material in case of spillage is placed on shelf in balance room and on cart in corridor outside course lab 6145.

28. Final risk assessment of the method

2. medium risk

29. Comments on final risk assessment and additional risk reducing measurements

EtBr is a DNA intercalant and as such can cause mutations, leading to cancer and other unknown diseases.

Signature
Supervisor

Date

Christer Larsson

Date of reassessment: